Frequently written Electrical Corrections issued at hospitals and other identified issues.

- Failure to label or identify the essential electrical (emergency) systems.
- If labeled or identified, labeled or identified improperly, not only as to whether or not they are essential, but which branch are they (life safety, critical, or equipment branch).
- Because of the identification issues identified above, findings of improper installation of loads not permitted on essential electrical panels.
- Lack of separation of emergency system wiring from other system wiring thereby jeopardizing emergency loads.

> *Note: There are at least **two sources of power** supplying a hospital. The **normal source,** which supplies power to panels supplying non-essential loads and power to panels supplying essential loads; and an **alternate power source supplying the essential loads** as a necessary back-up.*
>
> *There are also two electrical systems (categories) that comprise the essential electrical system in hospital occupancies. These are:*
>
> 1. *The essential equipment system, and*
> 2. *The emergency electrical system. The emergency electrical system is further broken down into two branches,*
>   - *The life safety branch and*
>   - *The critical branch.*
>
> *All of the panel boards and distribution equipment need to be properly identified so as not to jeopardize the loads that are required to be operational.*

- On remodels where circuits are added from new or existing panels, and circuits are brought into a patient care area from more than one source (normal branch, and/or essential branches) It's been found that the required bonding of panels together (per NEC 517.14.) was missing, which in turn creates a potential shock hazard.
- Using equipment not approved (listed) for the purpose (For use in Hospitals, or NEC 517 Occupancies, etc)
- Use of flexible raceways on the wiring of emergency systems in hospitals.
- Reported that there seems to be a lack of understanding by some (hospital) contract administrators that there is a requirement for electrical permits, inspections, and electrical plan review.
- The same issues (lack of understanding) by hospital maintenance electricians (as to permit and plan review requirements)
- Lack of a proper contact person at the hospital. (Someone with the knowledge of the scope of work performed and with a set of keys to allow appropriate access.)

Plan Review: Correction Issues commonly noted at Hospital Facilities
(Before installation)

- Failure to meet the Essential Electrical System design criteria for Hospital Installations as set forth in NFPA 70 (NEC) and NFPA 99.
- Failure to maintain a code compliant Essential Electrical System, through alterations or proposed alterations to the system.
- Failure to provide for the installation bonding jumpers between normal and critical panels in a critical care area.
- Failure to provide for the installation of power from both normal and alternate sources in **all** critical care locations.
- Failure to design Emergency Battery back-up lighting units to be supplied from essential system.
- Failure to design 2nd level GFP (ground fault protection) where required, and/or installing 2nd level GFP where not allowed on the load side of transfer switches on the Essential Electrical System, jeopardizing life safety and critical loads.
- Attempting to design in manually operated transfer switches instead of Automatic Transfer Switches as required.

How to Avoid these Corrections:

It's apparent that some of the issues that are found upon inspection of actual installations at Hospitals; might be avoided by properly submitting **all** new installations, and alterations to existing installations, to Electrical Plan Review. This is already a requirement, but not always adhered to. Full adherence to the rule would help avoid potentially unsafe situations and could save time and dollars as well, if costly repairs are needed.

It is also apparent that from Electrical Inspection's perspective, having at least one person that could serve as a point-of-contact, would help immensely. Ideally that person would have not only the responsibility of interfacing with electrical inspection, but also the authority to ensure that all electrical installations or modifications at a facility were done in a code compliant manner.

Contact the Electrical Program

Call the Electrical Plan Review section – Bill Eckroth, (360) 902-5246.